

AMENDMENTS TO THE CLAIMS:

The following listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claims 1-274. Canceled.

Claim 275. (Currently Amended) A method of producing a library comprised of chimerized, ~~[[but]]~~ defined polynucleotide sequences each of which is comprised of a defined number of polynucleotide segments that are assembled in an ordered fashion, the method comprising:

a) generating a plurality of defined polynucleotide segments ~~[[of]]~~
selected from aligned substrate nucleic acid sequences,
wherein said substrate nucleic acids encode full-length enzymes,
and wherein ~~borders~~ boundaries defining the polynucleotide segments
are selected ~~by aligning the~~ from the aligned substrate nucleic acid
sequences; and

b) reassembling said defined polynucleotide segments in order
thereby producing the library of chimerized, ~~[[but]]~~ defined polynucleotide
sequences, such that said segments are reassembled in an ordered fashion to
produce each chimerized, ~~[[but]]~~ defined polynucleotide sequence
encoding a full-length enzyme, each of which is comprised of a defined
number of polynucleotide segments that are reassembled in an ordered
fashion.